

II. AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) System for enhancing security of e-mails transmitted from a sender to a receiver over a data transmission network, comprising:

a Message Transfer Agent (MTA) associated with said sender for transmitting over said network an original e-mail sent by said sender according to a predetermined list of a plurality of relay MTAs;

said MTA associated with said sender including a message splitting means adapted to divide said original e-mail into a plurality of chunks according to a predetermined algorithm, wherein each of said plurality of chunks is forwarded to a different one of the plurality of relay MTAs on the predetermined list such that each of said plurality of chunks is transmitted over a different randomly selected pathway of the data transmission network, and wherein message splitting means divides the plurality of chunks of the original e-mail at the character level, and wherein each of the plurality of chunks is preceded by a chunk number; and

a chunk assembly agent for receiving from said relay MTAs the plurality of chunks and for re-assembling the plurality of chunks using said predetermined algorithm and the chunk number in order to re-build said e-mail before sending it to said receiver, wherein each of said plurality of chunks is transmitted through a different relay MTA of the plurality of relay MTAs as a chunk e-mail having a same destination e-mail address, the destination e-mail address comprising an e-mail address of the chunk assembly agent.

2. (Canceled).

3. (Previously Presented) The system according to claim 1, wherein each of said plurality of chunks is encrypted using a public key of said chunk assembly agent before being transmitted over said network.

4. (Currently Amended) Method for enhancing security of e-mails transmitted from a sender to a receiver over a data transmission network wherein a Message Transfer Agent (MTA) associated with said sender is in charge of transmitting an original e-mail sent by said sender, comprising:

dividing said original e-mail into a plurality of chunks using an algorithm, wherein dividing the original e-mail comprises of the original e-mail at the character level, and wherein each of the plurality of chunks is preceded by a chunk number,

sending said chunks as e-mails over the data transmission network to a plurality of relay MTAs defined in a predetermined list of relay MTAs, wherein each of said plurality of chunks is sent to a different one of the plurality of relay MTAs on the predetermined list such that each of said plurality of chunks is transmitted over a different pathway of the data transmission network, and

re-assembling by a chunk assembly agent said chunks in order to re-build said original e-mail by using said predetermined algorithm and the chunk number, before sending said original e-mail to said receiver,

wherein each of said chunks is transmitted through a different randomly selected relay MTA of the plurality of relay MTAs as a chunk e-mail having a same destination e-mail address, the destination e-mail address comprising an e-mail address of the chunk assembly agent.

5. (Canceled).

6. (Previously Presented) The method according to claim 4, wherein each chunk is encrypted using a public key of said chunk assembly agent before being transmitted, said encrypted chunk e-mail being decrypted when received by said chunk assembly agent using a private key.

7. (Previously Presented) The method according to claim 6, wherein text of said original e-mail is encrypted by using the public key of said receiver before being divided into a plurality of chunks.

8. (Currently Amended) A security system, comprising:

a Message Transfer Agent (MTA) associated with a sender for transmitting over a network an original e-mail sent by the sender, the MTA including a message splitting system for dividing the original e-mail into a plurality of chunks according to a predetermined algorithm and for forwarding the plurality of chunks to a plurality of relay MTAs defined in a predetermined list of relay MTAs, wherein each of said plurality of chunks is forwarded to a different one of the plurality of relay MTAs on the predetermined list such that each of said plurality of chunks is transmitted over a different randomly selected pathway of the data transmission network, ~~and~~ wherein the splitting system divides the plurality of chunks of the original e-mail at the character level, and wherein each of the plurality of chunks is preceded by a chunk number; and

a chunk assembly agent for receiving from the plurality of relay MTAs the plurality of chunks and for re-assembling the plurality of chunks using the predetermined algorithm and the chunk number in order to re-build the e-mail before sending it to a receiver, wherein each of said plurality of chunks is transmitted through a different relay MTA of the plurality of relay MTAs a chunk e-mail having a same destination e-mail address, the destination e-mail address comprising an e-mail address of the chunk assembly agent.

9. (Canceled).

10. (Previously Presented) The system according to claim 8, wherein the message splitting system encrypts each of the plurality of chunks using a public key associated with the chunk assembly agent.

11. (Currently Amended) A security system, comprising:

a chunk assembly agent for:

receiving from a plurality of relay Message Transfer Agents (MTAs) over a network a plurality of chunks of an original e-mail that has been divided into the plurality of chunks according to a predetermined algorithm, wherein each of the plurality of chunks is received from a different one of the plurality of relay MTAs such that each of said plurality of chunks is received over a different randomly selected pathway of the data transmission network, ~~and~~ wherein the plurality of chunks of the original e-mail are divided at the character level, and wherein each of the plurality of chunks is preceded by a chunk number,

wherein each of said plurality of chunks has a same destination e-mail address, the destination e-mail address comprising an e-mail address of the chunk assembly agent; and

re-assembling the plurality of chunks using the predetermined algorithm and the chunk number in order to re-build the e-mail before sending it to a receiver.

12. (Currently Amended) The system according to claim 1, wherein the predetermined algorithm is “chunk # = 1 + <order number of the character> ~~module x~~ modulo x”.

13. (Currently Amended) The method according to claim 4, wherein the predetermined algorithm is “chunk # = 1 + <order number of the character> ~~module x~~ modulo x”.

14. (Currently Amended) The system according to claim 8, wherein the predetermined algorithm is “chunk # = 1 + <order number of the character> ~~module x~~ modulo x”.

15. (Currently Amended) The system according to claim 11, wherein the predetermined algorithm is “chunk # = 1 + <order number of the character> ~~module x~~ modulo x”.